

IN THE CLAIMS

Amend the claims as follows:

1. (Currently Amended) A ceramic thermal barrier coating wherein at least a portion of the thermal barrier coating comprises a stabilized zirconia coating including hafnia in an amount of at least about 15 weight % effective to reduce thermal conductivity of the ~~thermal barrier~~ stabilized zirconia coating as compared to a similar stabilized zirconia coating having an impurity amount of hafnia.

2. (Cancelled) ✓

² 3. (Currently Amended) The thermal barrier coating of claim ~~2~~ ¹ ~~comprising~~ wherein at least the portion thereof comprising said stabilized zirconia coating comprises about 15.8 to about 63.4 weight % hafnia, about 2.0 to about 36.6 weight % yttria, and balance zirconia.

³ *file* 4. (Currently Amended) The thermal barrier coating of claim ² ~~3~~ ³ ~~comprising~~ wherein at least the portion thereof comprising said stabilized zirconia coating comprises about 34.3 to about 61.6 weight % hafnia, about 5.3 to about 11.8 weight % yttria, and balance zirconia.

⁴ 5. (Currently Amended) The thermal barrier coating of claim ³ ~~4~~ ³ ~~comprising~~ wherein at least the portion thereof comprising said stabilized zirconia coating comprises about 58.1 to about 59.7 weight % hafnia, about 5.3 to about 8 weight % yttria, and about 34 to about 35 weight % zirconia.

⁵6. (Currently Amended) The thermal barrier coating of claim ⁴5 ~~that~~ wherein at least the portion thereof comprising said stabilized zirconia coating exhibits thermal conductivity of less than 1.5 W/m-K.

⁶7. (Currently Amended) An article comprising a metallic substrate and a ceramic coating on a surface of said substrate, said ceramic coating having at least a portion comprising a stabilized zirconia coating including hafnia in an amount of at least about 15 weight % effective to reduce thermal conductivity of the ~~thermal barrier~~ stabilized zirconia coating as compared to a similar stabilized zirconia coating having an impurity amount of hafnia.

⁷8. (Currently Amended) The article of claim ⁶7 wherein hafnia is present in at least the portion of the ceramic coating comprising the stabilized zirconia coating in amount of at least about 15 weight % to about 64 weight % of the coating.

⁸9. (Currently Amended) The article of claim ⁷8 wherein at least the portion of the ceramic coating comprising the stabilized zirconia coating comprises about 15.8 to about 63.4 weight % hafnia, about 2.0 to about 36.6 weight % yttria, and balance zirconia.

⁹10. (Currently Amended) The article of claim ⁸9 wherein at least the portion of the ceramic coating comprising the stabilized zirconia coating comprises about 34.3 to about 61.6 weight % hafnia, about 5.3 to about 11.8 weight % yttria, and balance zirconia.

¹⁰11. (Currently Amended) The article of claim ⁹10 wherein at least the portion of the ceramic coating comprising the stabilized zirconia coating comprises about 58.1 to about 59.7 weight % hafnia, about 5.3 to about 8 weight % yttria, and about 34 to about 35 weight % zirconia.

¹¹
~~12~~. (Currently Amended) The article of claim ¹⁰~~11~~ wherein at least the of the ceramic coating comprising the stabilized zirconia coating exhibits a thermal conductivity of less than 1.5 W/m-K.

¹²
~~13~~. (Original) The article of claim ⁶~~7~~ wherein said substrate comprises a superalloy gas turbine engine blade or vane.

¹³
~~14~~. (Currently Amended) The article of claim ⁶~~7~~ further including a bondcoat between said thermal barrier coating and said substrate.

¹⁴
~~15~~. (Currently Amended) A method of protecting a surface of a metallic substrate, comprising:

depositing a coating comprising zirconia, yttria and hafnia on the surface wherein the hafnia is present in the coating in an amount of at least about 15 weight % effective to reduce thermal conductivity of the coating deposited on the substrate as compared to a similar coating having an impurity amount of hafnia.

He ¹⁵
~~16~~. (Original) The method of claim ¹⁴~~15~~ wherein hafnia is present in the coating in amount of at least about 15 weight % to about 64 weight % of the coating.

¹⁶
~~17~~. (Original) The method of claim ¹⁵~~16~~ wherein the coating comprises about 15.8 to about 63.4 weight % hafnia, about 2.0 to about 36.6 weight % yttria, and balance zirconia.

¹⁷
~~18~~. (Original) The method of claim ¹⁶~~17~~ wherein the coating comprises about 34.3 to about 61.6 weight % hafnia, about 5.3 to about 11.8 weight % yttria, and balance zirconia.

¹⁸
~~19~~. (Currently Amended) The ~~article~~ method of claim ¹⁷~~18~~ wherein the coating comprises about 58.1 to about 59.7 weight % hafnia, about 5.3 to about 8 weight % yttria, and about 34 to about 35 weight % zirconia.

¹⁹
20. (New) A coated article comprising a substrate selected from the group consisting of a nickel based superalloy and cobalt based superalloy and a ceramic thermal barrier coating on the substrate, said coating comprising stabilized zirconia and hafnia in an amount of at least about 15 weight % effective to reduce thermal conductivity of the coating as compared to a similar stabilized zirconia coating having an impurity amount of hafnia therein.

²⁰
21. (New) The coated article of claim ¹⁹20 wherein the coating comprises about 15.8 to about 63.4 weight % hafnia, about 2.0 to about 36.6 weight % yttria, and balance zirconia.

²¹
22. (New) The coated article of claim ²⁰21 wherein the coating comprises about 34.3 to about 61.6 weight % hafnia, about 5.3 to about 11.8 weight % yttria, and balance zirconia.

²²
23. (New) The coated article of claim ²¹22 wherein the coating comprises about 58.1 to about 59.7 weight % hafnia, about 5.3 to about 8 weight % yttria, and about 34 to about 35 weight % zirconia.

²³
24. (New) A ceramic coating comprising stabilized zirconia and hafnia in an amount of at least about 15 weight % of the coating effective to reduce thermal conductivity of the ceramic coating as compared to a similar ceramic coating having an impurity amount of hafnia therein.

²⁴
25. (New) The ceramic coating of claim ²³24 comprising about 15.8 to about 63.4 weight % hafnia, about 2.0 to about 36.6 weight % yttria, and balance zirconia.

²⁵
26. (New) The ceramic coating of claim ²⁴25 comprising about 34.3 to about 61.6 weight % hafnia, about 5.3 to about 11.8 weight % yttria, and balance zirconia.

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²⁰ 27. (New) The ceramic coating of claim ²⁵ 26 comprising about 58.1 to about 59.7 weight % hafnia, about 5.3 to about 8 weight % yttria, and about 34 to about 35 weight % zirconia.
